

REMARKS

Claims 1-23 are currently pending in the application. Applicants have amended claims 1, 2, and 18. Support for the amendments to independent claims 1 and 18 can be found throughout the specification and particularly in paragraphs [0010] to [0019] and [0034]. The amendment to claim 2 is to correct an obvious typographical error. Applicants request reconsideration of the application in light of the following remarks.

Rejections under 35 U.S.C. §103

To establish a *prima facie* case of obviousness under 35 U.S.C. §103, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Third, the cited prior art reference must teach or suggest all of the claim limitations. Furthermore, the suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based upon the Applicants' disclosure. A failure to meet any one of these criteria is a failure to establish a *prima facie* case of obviousness. MPEP §2143.

Claims

Claims 1-3, 6, 13, and 18 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Gigi (U.S. Publication No. 2002/0184005 A1, hereinafter "Gigi"), in view of Gao (WO 01/03125 A1, hereinafter "Gao"). Applicants respectfully traverse this rejection and request reconsideration of the claims.

Gigi discloses a speech coding system with a speech encoder and a speech decoder. The speech encoder comprises a preprocessor and an ADPCM (adaptive differential pulse code modulation). The input for the ADPCM is a sampled audio signal provided by the preprocessor. A further input signal for the ADPCM encoder is formed by a codec mode signal. The codec mode signal determines the bit allocation for the code words in the bitstream output of the ADPCM encoder and the ADPCM decoder (see page 2, paragraph [0014] of Gigi). The bit rate in the codec of Gigi is determined by the codec mode signal without considering the characteristic of the inputted audio signal.

Unlike in Gigi, the coding rate in the codec of the present invention is determined based on the characteristic of the audio signal (e.g., voice or noise). The coding rate of Gigi is determined based, not on the characteristics of the audio signal, but rather on a codec mode signal. Independent claim 1 (Currently amended) and independent claim 18 (Currently amended) recite “a codec having a variable coding rate determined based on a characteristic of the audio signal.” Clearly, the codec of Gigi is quite different from Applicants’ claimed codec having a variable coding rate, as recited in independent claim 1 (Currently amended) and independent claim 18 (Currently amended). Further, there is no disclosure in Gigi to pitch harmonic enhancement “PHE” preprocessing of the audio signal, as also recited in independent claim 1 (Currently amended) and independent claim 18 (Currently amended).

Gao fails to overcome the deficiencies of the primary reference, Gigi. Gao discloses a speech coding system. There is no disclosure in Gao to a codec having a variable coding rate determined based on a characteristic of the audio signal, as recited in independent claim 1 (Currently amended) and independent claim 18 (Currently amended).

Further, as shown in Figure 2, Gao discloses performing PHE processing of the speech data in a speech encoder. However, in the present invention the PHE preprocessing of the

audio signal is “before the audio signal is processed by the codec,” as recited in independent claim 1 (Currently amended) and independent claim 18 (Currently amended), such that the audio signal is coded in a higher coding rate. In the present invention, PHE preprocessing is to increase the coding rate of the audio signal in the codec, which is optimized for human voice and which tends to code other types of the audio signal in a low coding rate, such as an enhanced variable rate coding (EVRC) codec. Thus in Gao, there is no preprocessing of the audio signal before the audio signal is processed by the codec, let alone to enhance, or increase, the pitch components of the audio signal. While Gao discloses performing PHE processing for speech data, such performance is merely a portion of coding of the speech encoder. Clearly, the PHE processing of Gao is quite different from Applicants’ claimed PHE preprocessing, as recited in independent claim 1 (Currently amended) and independent claim 18 (Currently amended).

Furthermore, it is difficult, if not impossible, to imagine how one skilled in the art in possession of these references could conceive of the present invention absent hindsight reconstruction which was prohibited by the Supreme Court in *Diamond Rubber Co. v. Consolidated Rubber Tire Co.*, 220 U.S. 428 435-436 (1911). To find obviousness, “there must be some reason for the combination other than the hindsight gleaned from the invention itself.” *Interconnect Planning Corp. v. Feil*, 227 U.S.P.Q. 543, 551 (Fed. Cir. 1985). Stated in another way, “[I]t is impermissible to use the claimed invention as an instruction manual or ‘template’ to piece together the teachings of the prior art so that the claimed invention is rendered obvious.” *In re Fritch* 23 U.S.P.Q.2d 1780, 1784 (Fed. Cir. 1992).

Applicants respectfully submit that the combination of the Gigi and the Gao patents for the purposes of the present rejection is improper because of the failure of either patent to suggest the combination. It is a requirement that in making a combination of patents in a

rejection, those patents must suggest the desirability of the combination of teachings. This requirement was expressed by the Court of Customs and Patent Appeals in In re Imperato, 179 U.S.P.Q. 730 where it stated:

“...the mere fact that those disclosures can be combined does not make the combination obvious unless the art also contains something to suggest the desirability of the combination.” Thus, claims 1-3, 6, 13 and 18 are not obvious in view of Gigi and Gao.

Claims 4-5, 7-12 and 19-21 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Gigi, in view of Gao as applied to claim 3 above, and further in view of Tuncer (‘Signal Injection With Perceptual Criteria’, *Electrik*, Vol. 6, No. 2, 1998, pp. 89-106, hereinafter “Tuncer”). Applicants respectfully traverse this rejection and request reconsideration of the claims.

Tuncer fails to overcome the deficiencies of the primary reference, Gigi. There is no disclosure in Tuncer to a codec having a variable coding rate determined based on a characteristic of the audio signal and performing pitch harmonic enhancement (“PHE”) preprocessing of the audio signal before the audio signal is processed by the codec, as recited in independent claim 1 (Currently amended) and independent claim 18 (Currently amended). Thus, claim 4-5, 7-12, and 19-21 are not obvious in view of Gigi, Gao, and Tuncer.

Claims 14-17 and 22-23 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Gigi, hereinafter, in view of Gao as applied to claim 1 above, and further in view of Quatieri et al. (U.S. Patent No. 4,856,068, hereinafter “Quatieri”). Applicants respectfully traverse this rejection and request reconsideration of the claims.

Quatieri fails to overcome the deficiencies of the primary reference, Gigi. There is no disclosure in Quatieri to a codec having a variable coding rate determined based on a characteristic of the audio signal and performing pitch harmonic enhancement (“PHE”) preprocessing of the audio signal before the audio signal is processed by the codec, as recited

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in independent claim 1 (Currently amended) and independent claim 18 (Currently amended).
Thus, claims 14-17 and 22-23 are not obvious in view of Gigi, Gao, and Quatieri.

Applicants respectfully request that the obviousness rejections of claims 1-23 be withdrawn.

Regarding Doctrine of Equivalents

Applicants hereby declare that any amendments herein that are not specifically made for the purpose of patentability are made for other purposes, such as clarification, and that no such changes shall be construed as limiting the scope of the claims or the application of the Doctrine of Equivalents.

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CONCLUSION

Applicants respectfully request that a timely Notice of Allowance be issued in this case.

If any fees, including extension of time fees or additional claims fees, are due as a result of this response, please charge Deposit Account No. 19-0513. This authorization is intended to act as a constructive petition for an extension of time, should an extension of time be needed as a result of this response. The examiner is invited to telephone the undersigned if this would in any way advance the prosecution of this case.

Respectfully submitted,

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